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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,560	01/14/2002	Katsumi Adachi	SAEG102.001AUS	4973

7590 06/02/2004

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Washington, DC 20005-3096

EXAMINER	
NGUYEN, JENNIFER T	
ART UNIT	PAPER NUMBER
2674	

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/047,560	ADACHI ET AL.	
	Examiner	Art Unit	
	Jennifer T Nguyen	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 January 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office action is responsive to amendment file 2/23/2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatao et al. (U.S. Patent No. 4,425,513) in view of Iverson (U.S. Patent No. 6,332,172).

Regarding claim 1, referring to Fig. 1, Hatao teaches an image display device (10) comprising: a first storage device (7) for storing an image data; an image processing device (2); a second storage device (4, 5) for storing the image data after being processed; a display device for displaying the image data after being processed; a display drive device (20) for driving the display device; and a control device (2) for controlling the operation of the display drive device, wherein the control device (1) determines whether the image data stored in the first storage device (7) is dynamic or static, and, in case of a static image, after storing the signals corresponding to one frame of the image data in the second storage device (5), operates only the second storage device (5), the display drive device and the image display device (see abstract, col. 2, line 37 to col. 3, line 3).

Hatao differs from claim 1 in that he does not specifically teach the image processing device for reducing the number of bits of the image data; and the second storage device has a smaller memory capacity than the first storage device. However, referring to Figs. 1 and 6,

Iverson teaches the image processing device (604) for reducing the number of bits of the image data; and the second storage device (610) has a smaller memory capacity than the first storage device (602) (from col. 6, line 25 to col. 7, line 33 and col. 10, line 42-53). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the image processing device for reducing the number of bits of the image data; and the second storage device has a smaller memory capacity than the first storage device as taught by Iverson in the system of Hatao in order to reduce energy consumption.

Regarding claim 3, the combination of Hatao and Iverson differs from claim 3 in that it does not specifically teach the second storage device and the display drive device are united into one body by disposing them on the same chip. However, it would have been obvious to obtain the second storage device and the display drive device are united into one body by disposing them on the same chip in order to save space, weight, and cost of the device.

Regarding claim 6, Hatao teach a dynamic image processing device (4) and a static image processing device (5); a switching device (SW) for switching between the dynamic image processing device and the static image processing device, wherein the control device (1) determines whether the image data stored in the first storage device (7) is that of a dynamic image or a static image and operating the switching device according to that determination, if the image data is that of a dynamic image, the dynamic image processing device is made to process the image data, and if the image data is that of a static image, the static image processing device is made to process the image data (see abstract, col. 2, line 37 to col. 3, line 3).

Hatao differs from claim 6 in that he does not specifically teach the image processing device for reducing the number of bits of the image data. However, referring to Figs. 1 and 6,

Iverson teaches the image processing device (604) for reducing the number of bits of the image data (from col. 6, line 25 to col. 7, line 33). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the image processing device for reducing the number of bits of the image data as taught by Iverson in the system of Hatao in order to reduce energy consumption.

4. Claims 4, 5, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatao et al. (U.S. Patent No. 4,425,513) in view of Iverson (U.S. Patent No. 6,332,172) and further in view of Werner (U.S. Patent No. 6,151,074).

Regarding claim 4, the combination of Hatao and Iverson differs from claim 4 in that it does not specifically teach the image processing device processes the image data by an error diffusion. However, Werner teaches image processing device processes the image data by a error diffusion (col. 3, lines 40-60). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the image processing device processes the image data by a error diffusion as taught by Werner in the system of the combination of Hatao and Iverson in order to reduce quantization artifacts.

Regarding claim 5, the combination of Hatao, Iverson, and Werner teaches the image processing device reduces the total number of bits of the three elements (RGB) contained in the image data in such a manner that (col. 3, lines 40-60 of Werner).

The combination of Hatao, Iverson, and Werner differs from claim 5 in that it does not specifically teach after conducting the image processing, the number of G bits becomes the largest and the number of B bits becomes the smallest. However, it would have been obvious to obtain after conducting the image processing, the number of G bits becomes the largest and the

number of B bits becomes the smallest in order to prevent roughness of image surface, thereby a high quality image can be maintained.

Regarding claim 8, the combination of Hatao, Iverson, and Werner teaches the image display device is a liquid crystal panel (col. 3, lines 5-25 of Werner).

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hatao et al. (U.S. Patent No. 4,425,513), Iverson (U.S. Patent No. 6,332,172) in view of Werner (U.S. Patent No. 6,151,074) and further in view of Perogo (U.S. Patent No. 5,835,082).

Regarding claim 7, the combination of Hatao, Iverson, and Werner teaches and the static image processing device processes the image by a error diffusion (col. 3, lines 40-60 of Werner).

The combination of Hatao, Iverson, and Werner differs from claim 7 in that it does not specifically teach the dynamic image processing device processes the image by an FRC method. However, Perogo teaches the dynamic image processing device processes the image by an FRC method (col. 2, lines 35-48). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the dynamic image processing device processes the image by an FRC method as taught by Perogo in the system of the combination of Hatao, Iverson, and Werner in order to lower power consumption.

6. Applicant's arguments with respect to claims 1 and 3-8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jennifer T. Nguyen** whose telephone number is **703-305-3225.** The examiner can normally be reached on Mon-Fri from 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reach at **703-305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC. 20231

Or faxed to: 703-872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, sixth-floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703-306-0377.

JNguyen
05/25/2004

REGINA LIANG
PRIMARY EXAMINER